

Amendments to the Specification

Please amend the paragraph beginning on page 2, line 9 of the instant specification as follows.

There is therefore an urgent need for a replacement heart valve which avoids the disadvantages described above. For this purpose, production of artificial heart valves by tissue engineering has already been proposed. Tissue engineering is concerned with the development of "biohybrid" implants which grow on to tissue or even on to entire organ systems in the body. The production of biohybrid heart valves in the form of individual valve leaflets has also already been described; however, the heart valve leaflets produced by tissue engineering hitherto had the disadvantage that they have inadequate, insufficient connective tissue structures and therefore could not withstand the flow conditions prevailing in the ~~hear~~ heart after the biodegradable support structure had dissolved.

Please amend the paragraph beginning on page 2, line 19 of the instant specification as follows.

DE 19919625 describes an *in vitro* method for the production of a homologous heart valve. The heart valve described there is built up on a biodegradable support, which is incubated with homologous fibroblasts and/or myofibroblasts to form a connective tissue-like matrix and is then colonized with endothelial cells. The connective tissue-like matrix is then transferred into a bioreactor for maturing of the tissue. This heart valve is best adapted to the flow conditions in the human body. At the time of its implantation, the heart valve described in DE 19919625 almost entirely comprises autologous cell material, which is then sewn into the receiving heart. Under certain circumstances, one disadvantage of this heart valve could be that the surgical implantation is technically difficult to perform. There could moreover be a problem if the suture has to pass through the autologous, tissue-engineered tissue to be sewn in. Because of the extremely high load the heart valve is subsequently exposed to in the human body, tears could occur in the region of the suture.

Please replace the drawings with the replacement sheets showing Figures 1-3, filed herewith.